

FY24
Coastal
Resilience
Grant
Program



Pre-RFR Information and Successful Project Examples

March 16, 2023





AGENDA

- Grant Program
 - Goals
 - Applicant and Project Eligibility
 - Anticipated Timeline
 - Resources
- Successful Resilience Approaches
 - Proactive adaptation planning, community engagement, effective partnerships – *Resilient Woods Hole*
 - Dune restoration and public access, community education and engagement – *Continuous Dune Restoration at North Nantasket Beach, Hull*
 - Relocation of vulnerable infrastructure – Brewster, Kingston, Orleans
- Tips for crafting a competitive application
- Q&A and Discussion of potential projects

The Coastal Resilience Grant Program provides funding and technical assistance to:

- Address current coastal flooding and shoreline erosion issues
- Adapt to future climate conditions (Sea level rise, precipitation)
- Protect public facilities and infrastructure assets
- Provide broad public benefits and access
- Support adaptation of Environmental Justice communities



King tide flooding at Tenean Beach, 1/23/23.

Source: Richard Friend, mycoast.org



Support for Local Adaptation

Since the launch of the Coastal Resilience Grant Program in 2014:

- 327 applications submitted requesting a total of \$65 million in grant funding
- 201 applications funded (61% of total requests) with a total of \$37 million in grant awards
- \$14 million in local match provided
- 55 communities supported

Typically, we fund around \$4 million with a project cap of \$1 million. A 25% match of the total project cost is required (cash or in-kind services).

Applicants:

- 78 Massachusetts coastal cities and towns
 - Local or multi-community (regional) projects
- Certified 501(c)(3) nonprofits that own vulnerable coastal property that is open and accessible to the public

Project Types:

1. Detailed Vulnerability and Risk Assessment
2. Public Education
3. Proactive Planning
4. Redesigns and Retrofits
5. Shoreline Restoration
 - Beach, berm, and dune enhancement
 - Coastal bank stabilization
 - Fringing salt marsh restoration
 - Living breakwater or sill construction



Eligibility



Planning, feasibility
assessment, siting



Conceptual to Final
Design



Permitting



Construction, Monitoring
and Maintenance

Project
Phases

Anticipated FY24 Timeline

Milestone

Tentative Timeline

RFR released on CommBuys

April 2023

Q & A: Submit questions in writing; Q & A posted online

+ 2 weeks

Electronic applications due: coastal.resilience@mass.gov

May – June (+6 weeks from release)

Award announcement

August

Project scoping and contract execution

August – Sept.

Project start: Date of EEA's signature on your contract

Sept. – Oct.

Project/Contract end

June 30, 2024;
June 30, 2025 for 2-yr contracts



Evaluation Criteria

- Current vulnerability and management approach
- Climate impact and future vulnerability
- Need for assistance and engagement with Environmental Justice populations
- Detailed project description *
- Public benefit and interests
- Transferability
- Timeline *
- Budget *
- Project management and partners
- Overall project quality

** Break down by task and fiscal year*

EXAMPLE SCOPE OF WORK TEMPLATE

FY24 Coastal Resilience Grant Scope Template						
Project Task Description	Deliverables	Deliverable Due Date	Invoice Due Date	Total Grant	Total Match	Total Task
Task 1:						
Sub-task 1.1						
Sub-task 1.2						
Sub-task 1.3						
Total Task 1 Cost						
Task 2:						
Sub-task 2.1						
Sub-task 2.2						
Sub-task 2.3						
Total Task 2 Cost						
Task 3:						
Sub-task 3.1						
Sub-task 3.2						
Sub-task 3.3						
Total Task 3 Cost						

Climate Resources

Massachusetts State Hazard Mitigation and Climate Adaptation Plan



- **CZM StormSmart Coasts Program**
www.mass.gov/stormsmart-coasts-program

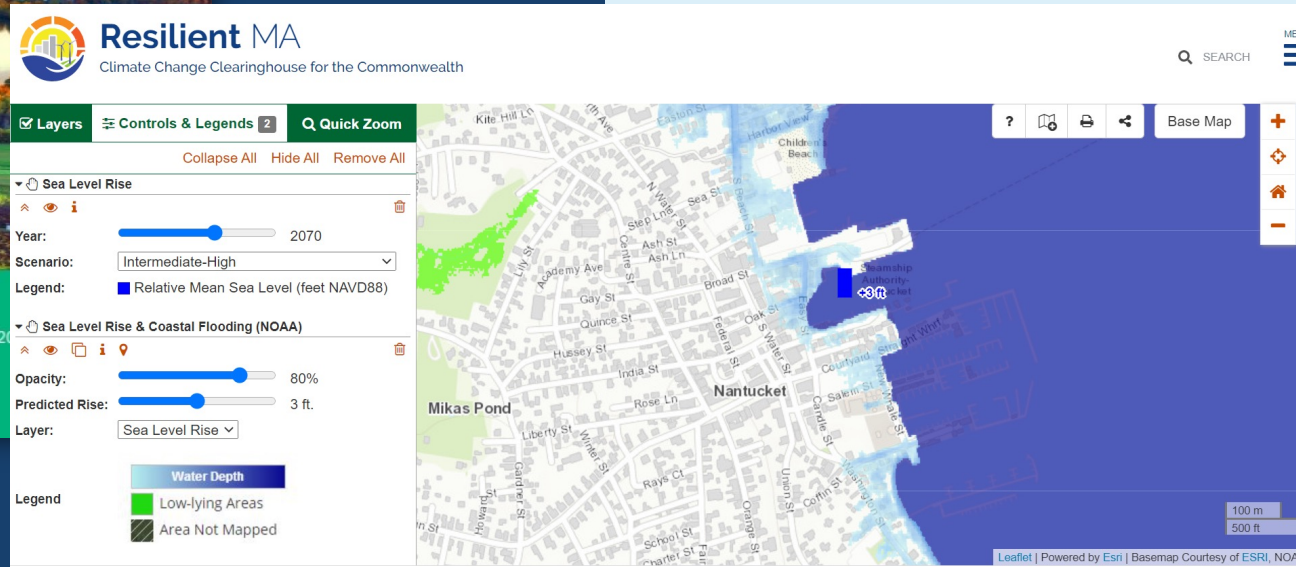
- CZM Grant Viewer, StormSmart Fact Sheets

- **MA Climate Change Clearinghouse**
www.resilientma.mass.gov

- Downscaled climate change projections, 2022 MA Climate Change Assessment

- **MA MyCoast** www.mycoast.org/m

- Reports and photos of storm impacts by municipality



Sea level rise



4 to 10.5 feet
by 2100

Environmental Justice Resources

- **MA Environmental Justice (EJ) Viewer** <https://www.mass.gov/info-details/environmental-justice-populations-in-massachusetts>
- **National Association of Climate Resilience Planners: Community Driven Climate Resilience Planning: A Framework**
<https://movementstrategy.org/wp-content/uploads/2021/10/Community-Driven-Climate-Resilience-Planning-A-Framework.pdf>
- **The Urban Sustainability Directors Network: Guide to Equitable, Community-Driven Climate Preparedness Planning**
https://www.usdn.org/uploads/cms/documents/usdn_guide_to_equitable_community-driven_climate_preparedness_high_res.pdf
- **Climigration Network: Lead with Listening: A Guidebook for Community Conversations on Climate Migration**
https://static1.squarespace.com/static/580df9afe4fcb5fdf27a053a/t/61e8a4769f74fa362c509168/1642636411977/LeadwithListening_ClimigrationNetwork_ENG-ESP_20210715.pdf
- **The Create Initiative: Sharing the Benefits of a Greening City**
https://create.umn.edu/wp-content/uploads/2020/02/sharing_in_the_benefits_of_a_greening_city_-_final_web.pdf



RESILIENT WOODS HOLE

CAPE COD,
MASSACHUSETTS

WOODS HOLE

Partnership project:

- Woods Hole Oceanographic Institution
- Town of Falmouth
- Marine Biological Laboratory
- NOAA Northeast Fisheries Science Center

- Based on previous Town and village vulnerability assessments (2020)
 - Identified low-lying neighborhoods, roadways, vulnerable facilities and infrastructure at risk
- Conduct proactive planning and public engagement process (2022)
 - Identify flood pathways and develop community priority adaptation strategies (near, medium, and long term)
 - Incorporate feedback into framework for strategies



Maintain Character

Preserve the existing uses, historic character and community resources by leveraging moderate and incremental strategies.



Nature-based Focus

Use nature-based solutions to enhance resiliency and ecosystems services by extending the effectiveness and potential longevity of coastal green infrastructure and open space.



Protect/Connect

Emphasize protection and maintenance of existing infrastructure and ensure vital connectivity by using hard and/or hybrid solutions to reduce exposure of important features and preserve critical accessways.



Adaptive Realignment

Reimagine Woods Hole through the lens of living with water by developing a multi-phased plan to accommodate water with lateral or vertical relocation where existing uses and configurations cannot reasonably continue.



- Implement near-term floodproofing measures for critical mechanical and building systems at WHOI and MBL labs and NOAA Aquarium building



- Conduct a feasibility study and alternatives analysis for Stoney Beach to address a significant flood pathway

PRIVATE-PUBLIC INVESTMENT TO ENSURE THE FUTURE OF A SEASIDE COMMUNITY AND BLUE ECONOMY VILLAGE

Join the Neighborhood Working Groups!

RWH seeks to recruit Woods Hole residents and stakeholders to provide input on climate resilience in their neighborhood.

[SIGN UP HERE](#)

- Continue public outreach to strengthen the partnership alliance

resilientwoodshole.org

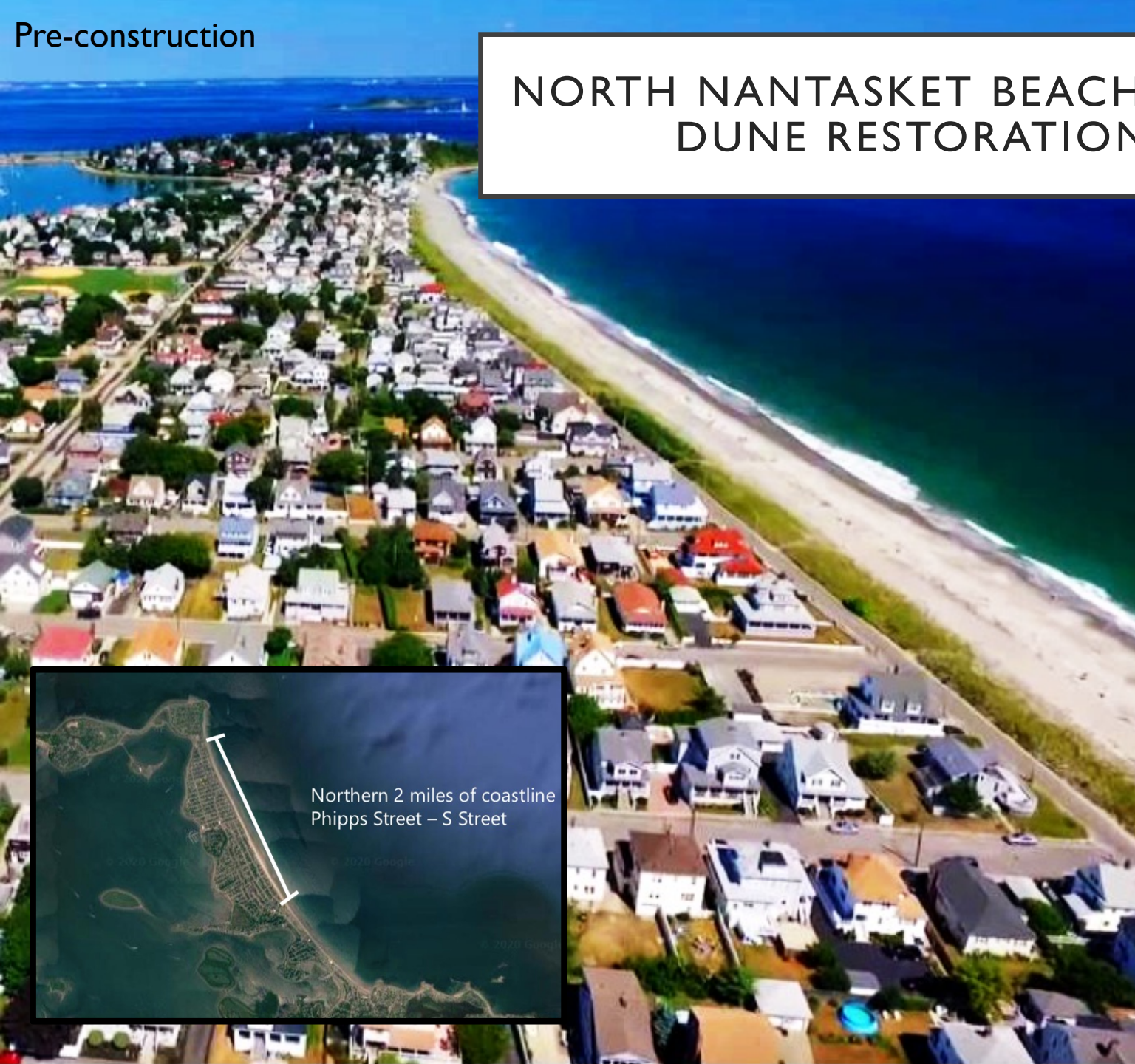
Study Area

Economic Impact

Infrastructure

NORTH NANTASKET BEACH - HULL DUNE RESTORATION

- Restore a continuous primary frontal dune along Beave Ave, including closing non-permitted crossings to improve storm damage protection
- Conduct extensive public education and outreach with abutters and residents affected by flooding in project area



Northern 2 miles of coastline
Phipps Street – S Street





North Nantasket Beach
Dune Restoration Project for Resiliency

PROJECT OVERVIEW

Beach and dune systems are the interface between water and land. They are naturally dynamic environments that fluctuate in size and form due to the impacts of wind, waves, tides, and storm events. The Town of Hull's Coastal Vulnerability Assessment and Adaptation Planning Study identified North Nantasket Beach and its dune system as the highest priority resource for adaptation to sea level rise, coastal flooding, and storm damage.

The Town is currently working on a design for a restored dune with an accessible crossover ramp at A Street and Beach Avenue. By restoring uninterrupted crossovers, the Town aims to enhance the function of the dune to protect abutting residents and neighbors from the impacts of flooding. Crossovers are the elevation which pedestrians travel over the dunes to reach the beach.

These actions will help establish a continuous dune along the entirety of North Nantasket Beach, significantly enhancing the system's storm damage protection benefits. New beach grass and other native salt tolerant species will be planted to help with erosion.

DUNE HEALTH

Dune health is critical to protecting residents from sea level rise and storm surge flooding. While the health of the dune naturally varies to a certain extent, dune crossers further interrupt the dune and create vulnerabilities in the system. These weak points can result in upward flooding during lower level storm events that may impact larger upland areas.

If lower elevation, unvegetated pathways form corridors for penetration of water during storm events and greatly minimize the coastal protection of the dune system.

PROTECT YOUR DUNE

- Use designated public and permitted crossovers
- Contribute to maintenance
- Follow new signage
- Do not create new crossovers without a permit
- Do not remove cobble dune stones

THE BEACH OUR COMMUNITY YOUR HOME

How the Dune Protects You

The overall volume of sediment in a dune is an important indicator of the level of protection that a dune can provide. The effectiveness of the North Nantasket Beach system was evaluated based on the volume of the existing dunes.

The table provides an indication of the required volume needed in a North Nantasket dune to reach a specific level of protection. These values can be used as a guideline for determining the design of a healthier dune system.

Approximate Volume of Dune (cubic yard/linear foot)	Level of Storm Protection (return period)
10	10-15 ft
15	15-20 ft
20	20-25 ft
25	25-30 ft
30	30-35 ft
35	35-40 ft
40	40-45 ft
45	45-50 ft

Understanding Future Flooding

The image above of North Nantasket Beach depicts flood probabilities for areas which extend to the shore distance of flooding during a storm event.

The dune system provides coastal protection for residents from sea level rise as well as the neighborhood behind. Flood probabilities are displayed produced just behind the dune system, while the beach is not experiencing over 30% sea level rise.

PROPOSED CHANGES TO NORTH NANTASKET BEACH

Overview

The following design and maintenance changes are proposed to support the resiliency of the North Nantasket Beach Community:

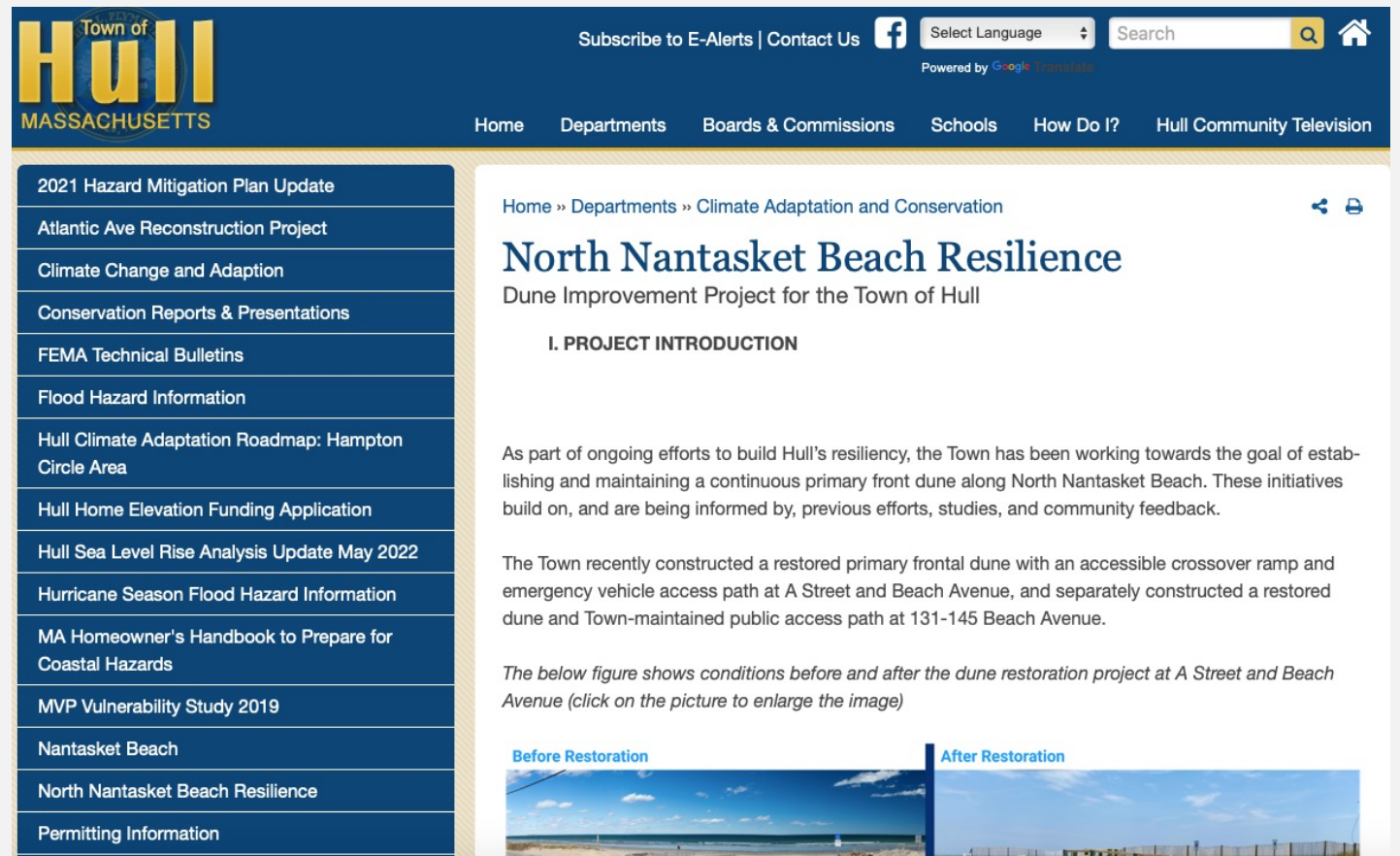
- Close nonpermitted crossovers
- Add sediment to build up dune profile and crest elevations
- Plant beach grass and other native, salt tolerant vegetation
- Install sand fencing at seaward edge of dune to prevent new paths
- Install signage to educate and encourage desired crossings

Legend

- All Total Crossings
- All Permitted, Town-maintained
- All Unpermitted
- represents 1 mile-wide or less
- ADA Accessible crossover

It is ending of proposed ADA accessible crossover at A Street and Beach Avenue

- Gained public support and acceptance for project through transparent process, consistent messaging, and various methods of communication
- Communicated benefits of continuous dune system and how the dune provides storm damage protection, and threats of a non-continuous dune system
- Utilized two-year timeline to reach seasonal residents



Town of Hull
MASSACHUSETTS

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2021 Hazard Mitigation Plan Update
Atlantic Ave Reconstruction Project
Climate Change and Adaption
Conservation Reports & Presentations
FEMA Technical Bulletins
Flood Hazard Information
Hull Climate Adaptation Roadmap: Hampton Circle Area
Hull Home Elevation Funding Application
Hull Sea Level Rise Analysis Update May 2022
Hurricane Season Flood Hazard Information
MA Homeowner's Handbook to Prepare for Coastal Hazards
MVP Vulnerability Study 2019
Nantasket Beach
North Nantasket Beach Resilience
Permitting Information

Home » Departments » Climate Adaptation and Conservation

North Nantasket Beach Resilience

Dune Improvement Project for the Town of Hull

I. PROJECT INTRODUCTION

As part of ongoing efforts to build Hull's resiliency, the Town has been working towards the goal of establishing and maintaining a continuous primary front dune along North Nantasket Beach. These initiatives build on, and are being informed by, previous efforts, studies, and community feedback.

The Town recently constructed a restored primary frontal dune with an accessible crossover ramp and emergency vehicle access path at A Street and Beach Avenue, and separately constructed a restored dune and Town-maintained public access path at 131-145 Beach Avenue.

The below figure shows conditions before and after the dune restoration project at A Street and Beach Avenue (click on the picture to enlarge the image)

Before Restoration **After Restoration**

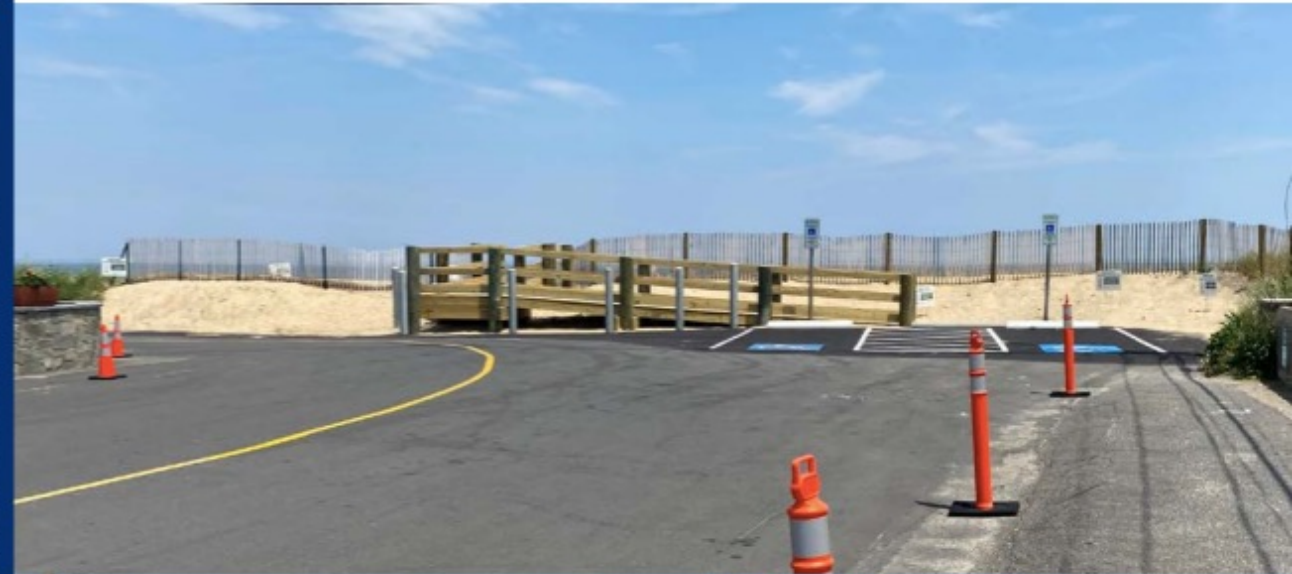
Dune Restoration at A Street and Beach Avenue

Before Restoration



After Restoration

2021



RELOCATION OF VULNERABLE INFRASTRUCTURE

Breakwater Beach, Brewster (2015)



Before construction



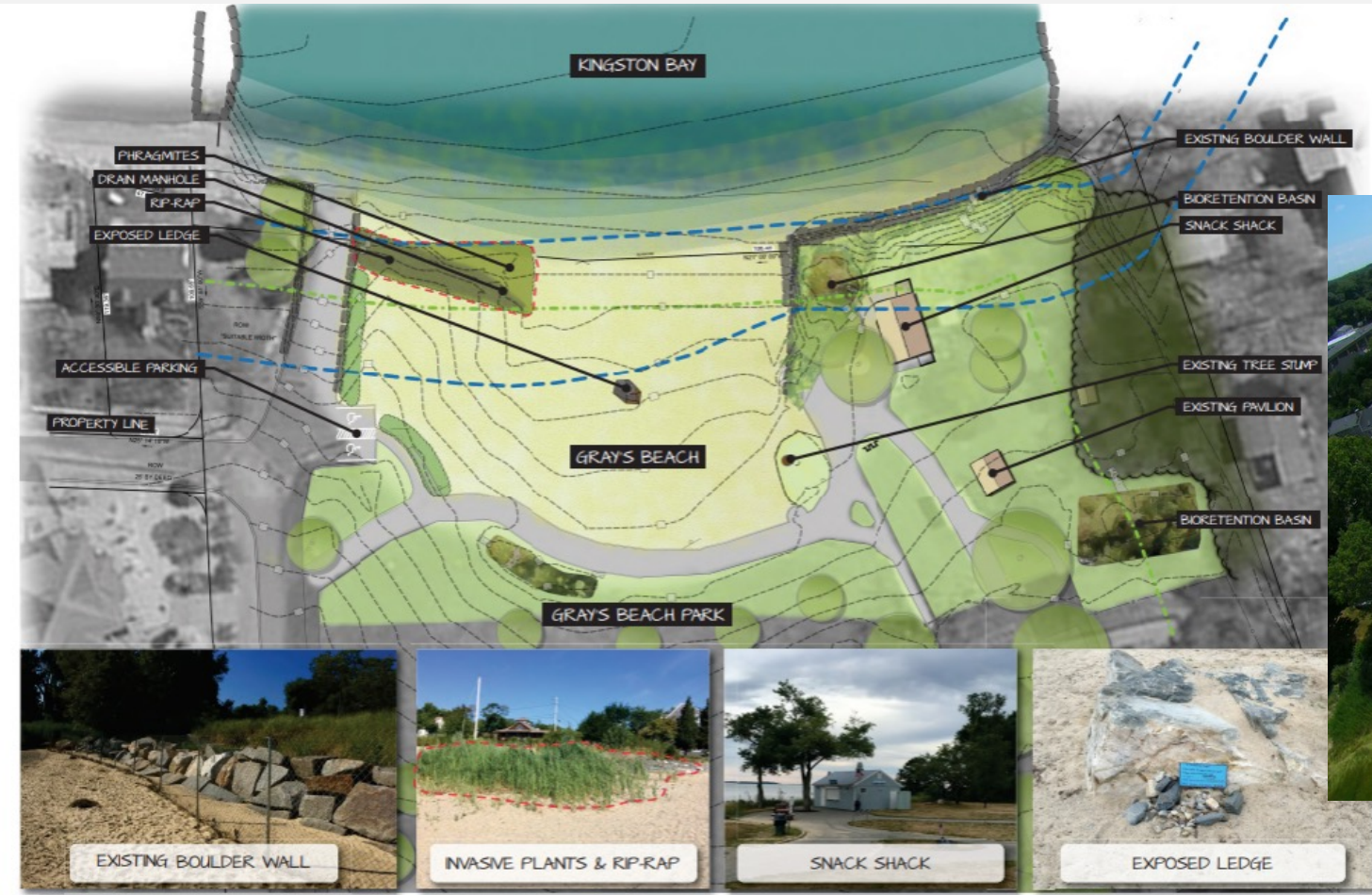
After construction



After 3rd major storm, March 2018

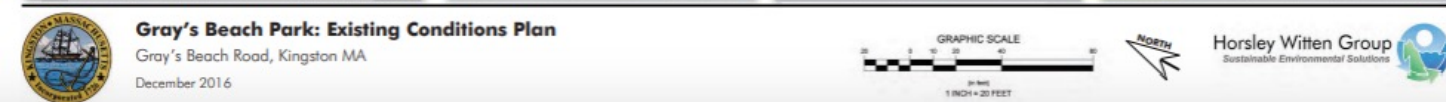
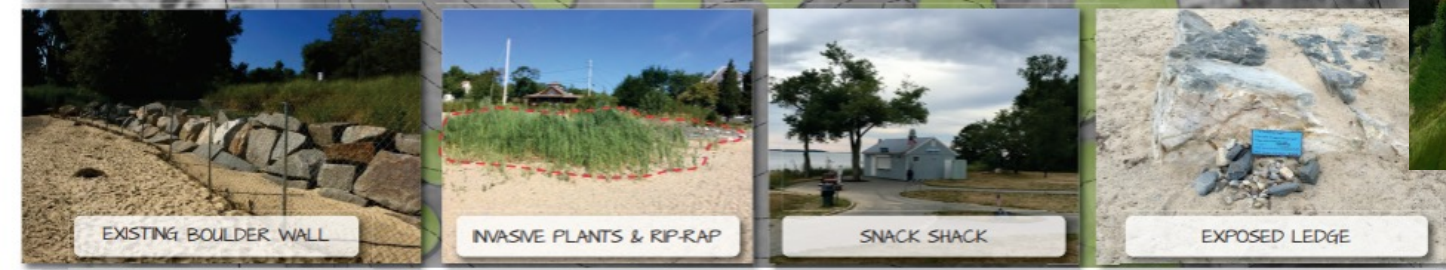
RELOCATION OF VULNERABLE INFRASTRUCTURE

Gray's Beach, Kingston (2018)



After Construction

Town will construct a rain garden at the site to address upland stormwater runoff



Existing Conditions Plan (Pre-construction)

RELOCATION OF VULNERABLE INFRASTRUCTURE

Nauset Beach, Orleans (2022)



Before Construction



After Construction

- Write applications assuming the Review Committee has no project background
- Review application narrative and check for consistency in Scope and Budget spreadsheets
 - Develop discreet tasks and deliverables
- Develop realistic timeline and budget
 - Anticipate local contracting timeframe (can be up to 3 months)
 - Allocate 1 to 2 weeks for review of deliverables and materials, especially before public meetings
- Consider building in regularly occurring project management team meetings into schedule
- Consider timing for securing or appropriating match funds (if town vote is needed for approving cash match)
- Coordinate with local departments and ensure they're in support
- Reach out to partners early and obtain quality letters of support
- Provide meaningful and accessible opportunities for public engagement



Tips!

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Contacts

CZM can
provide
project
guidance
until the
RFR is
released